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STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL
DIVISION OF AIR AND WASTE MANAGEMENT
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WASTE MANAGEMENT SECTION NEW CASTLE, DELAWARE 19720-4801 TELEPHONE: (302) 323 - 4540

June 21, 1990

Mr. Robert Guarni
U. S. EPA Region III
841 Chestnut Building
Philadelphia, PA 19107

SUBJECT: Proposed Pump Test of OR-6A for Characterization of Aquifer Characteristics at Standard Chlorine

Dear Mr. Guarni:

With completion of the second observation well in the Upper Potomac (MW-12) by Standard Chlorine anticipated this week, we are anxious to resolve any remaining issues with the proposed aquifer test. We believe that the test should be approved as proposed, but will address each issue raised in your March 2, 1990 memo on the aquifer test proposal. These are as follows:

1 - Pre-test water levels will be monitored to ensure that stresses due to step testing have dissipated prior to conducting the constant rate aquifer test.

2 - Pre-test continuous water level measurements should identify any fluctuations in water levels caused by remote pumping. The only major production wells withdrawing water from the upper Potomac within 10,000 feet of OR-6A are Artesian Water Company's wells at Artisan's Village. These wells are unlikely to cause significant water level fluctuations at Standard Chlorine; they operate continuously in any case, and Artesian will be contacted to stabilize pumpage before the onset of the test.

3 - Continuous water level measurements will be done with pressure transducers. Data collection intervals will be in accordance with accepted practice. Periodic measurements made in wells in the unconfined aquifer will be done with electric tape. These will be done infrequently to spot check and corroborate the continuous water level data.

4 - The water discharged during the pump test should have no adverse impact on the quality of Red Lion Creek. In 1985, during the latest aquifer test with OR-6A, it was determined that:

a - Sands of the upper Potomac were contaminated only with elevated levels (up to several hundred parts per billion) of volatile organics--no metals, no other organics--up to a few hundred feet from the landfill. Water from only one well in the "PN-2 sand" (perhaps continuous with the upper Potomac aquifer) was contaminated (with only about 100 ppb total volatile organics and only about 100 feet from the edge of the landfill.)

b - Ground water velocities--and the maximum rate of contaminant migration in the upper Potomac, are about 100 feet per year.

c - Well OR-6A is 3000 feet from the landfill.

d - Contaminants are not anticipated to ever reach OR-6A in detectable nor unacceptable concentrations.

This information strongly suggests that OR-6A is not contaminated and--even if contaminants had migrated to the well--could not be contaminated sufficiently to adversely impact Red Lion Creek. Nearly all the leachate generated at the Tybouts Corner landfill discharges as baseflow through the sandy Columbia Formation into Red Lion Creek as stream baseflow. In addition, Star Enterprises is able to extract the water from Red Lion Creek within a short distance downstream of the landfill for water supply (including potable water use).

Nevertheless, a search is being conducted for historic as well as current records of water quality from OR-6A. In addition, an official position from the State's NPDES program is being pursued. (The attached approval letter to Standard Chlorine assumes the water quality data which exists is sufficient. The letter will be revised in the event our records of water quality are insufficient.)

5 - Because of the foregoing information, continuous monitoring of volatiles in water pumped from OR-6A during the aquifer test will probably not be necessary.

6 - Water level observations were made in wells installed at Tybouts Corner in 1985. Aquifer parameters are not anticipated to have changed; hence, there is no need to re-collect continuous water level data from these wells. Collection of water level data obtained during previous aquifer testing is available.

7 - The estimation of drawdown in observation wells as a result of pumping OR-6A was only done to determine whether such a test would be anticipated to generate useful (i.e., analyzable) data. Data collected during the test will be analyzed using aquifer test methods deemed appropriate--including but not necessarily only the assumption that the aquifer is non-leaky.

I hope this information addresses your expressed concerns about the proposed aquifer test. A letter will be forwarded to Standard Chlorine (copy attached), approving the test with the caveat that they modify the draft test procedure to specify the information on water level frequency and measurement methods noted above, upon your concurrence.

Sincerely,

Diane E. Wehner

Diane E. Wehner
Environmental Scientist
Superfund-Remedial

Attachment

DEW:sfh
DEW2336

cc: Bernice Pasquini
N.V. Raman
Michael A. Apgar

DRAFT

Robert J. Touhey, P.E.
Assistant Vice President
Environmental Affairs
Standard Chlorine of Delaware, Inc.
Governor Lea Road
P. O. Box 319
Delaware City, Delaware 19706

Dear Mr. Touhey:

We have reviewed and approve (with a few additions noted below) the "Aquifer Analysis and Proposed Pump Test Specifications - Standard Chlorine RI/FS" (January 1990) prepared by Roy F. Weston, Inc. Although the variation in aquifer transmissivity and confining bed vertical hydraulic conductivity will likely be greater than that portrayed in the Table 1 (predicted drawdowns), we believe that you have demonstrated that the proposed pumping rate and duration should provide sufficient data to characterize the continuity and hydraulic characteristics of the Upper Potomac aquifer and confining beds beneath the Standard Chlorine site.

Measurement of water levels in the pumping and Potomac observation wells should be initiated early enough before startup of the test to determine whether other remote water withdrawals have significant influence on water level changes. In the event that such fluctuations could affect the interpretation of pump test results, we will be pleased to help identify and request stabilization of the withdrawals.

Please include assurance in the final plan that such measurements and evaluation will precede the pump test and that water level stresses created by step-testing OR-6A will be allowed to dissipate prior to starting the aquifer test. Also specify the type of instrumentation used for the continuous and periodic water level measurements and the time intervals between these measurements.

DRAFT

We look forward to observing the collection and reviewing the evaluation of the pump test data.

Sincerely,

Dilip R. Hansalia
Environmental Engineer
Superfund-Remedial

DEW:sfh
DEW2304

cc: Robert Guarni
N.V. Raman
Michael A. Apgar